

## REMARKS

Claims 1-15 are pending in the application. In this response, claims 1-5, 9-11 and 14-15 are amended. Exemplary support for the claim amendments can be found throughout the specification and claims as originally filed.

Applicants respectfully ask the Examiner to reconsider and withdraw the outstanding objections and rejections in view of the foregoing amendments and the following remarks.

### **Claim Objections**

Claims 1, 4, 5, 10 and 11 are objected to for various informalities. In this response these claims have been amended to address each of objections. Applicants respectfully ask that the objections be withdrawn in view of the amendments.

### **Rejections under 35 U.S.C. § 112**

Claims 1-15 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In this response, claims 1-3, 9-10 and 14-15 are amended to more particularly point out and distinctly claim the subject matter which Applicants regard as their invention. Specifically, the term "it" in claims 1-3, 9 and 15 has been replaced with the subject matter to which the pronoun "it" referred.

In claim 1, the references to "(2 x 2.92 Å)" and "(2 x 3.21 Å)" have been deleted. In addition, the phrase "may be" has been replaced with the term "is," and the phrase "a structure of one-dimensional (1D) character" has been deleted.

The word "the" has been deleted from the phrases "the titanium of the

polymer in  $Ti^{3+}$  form" and the titanium of the polymer in  $Ti^{4+}$  form" of claim 14 and the phrase "according to the invention" has been deleted from claim 15.

Applicants respectfully assert that these amendments overcome the rejection of claims 1-15 under 35 U.S.C. § 112, second paragraph, and respectfully ask that this rejection be withdrawn.

### **Rejections under 35 U.S.C. § 102**

Claims 1 and 2 have been rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Hideyuki (JP 57190645, hereafter "JP '645"). Applicants respectfully traverse this rejection.

As noted in the Office Action, JP '645 is silent concerning the structural properties of the fibers that are the subject matter of claims 1 and 2 of the present application. However, the Office has taken the position that such structural properties are inherent in the disclosure of JP '645. It is asserted that the periodicity of the fibers, and the makeup of each fiber (octahedral) is only dependent upon the compound making up the fiber. Applicants respectfully disagree.

The present specification provides polymer compositions having certain structural characteristics that are produced by the use of specific steps of the method disclosed in the application. Those specific methods, which do not use a water-insoluble organic binder such as cellulose acetate or polyvinyl chloride as described in JP '645, will influence the structural characteristics of the resulting polymer composition. Nothing in JP '645 discloses the polymer compositions of claims 1 and 2, which are polymers having specific characteristics, including polymer fibers wound

concentrically with a periodicity, deduced from the space in between the fibers, of between 3.5 Å and 4 Å, where each fiber is made up of  $\text{TiO}_6$  octahedra, and which share two opposed edges with two adjacent octahedra to form infinite chains that grow along the axis of a fiber, and where two adjacent chains form double strands by the communing of edges. Because JP '645 does not disclose each element of claims 1 and 2 of the present application, applicants respectfully ask that the rejection of claim 1 and 2 over JP '645 be withdrawn.

### **Rejections under 35 U.S.C. § 103**

Claim 3 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Hideyuki. This rejection is respectfully traversed. As discussed above, JP '645 discloses a porous gel prepared using a water-insoluble organic binder solution. Nothing in JP '645 discloses a polymer composition where the polymer comprises fibers wound concentrically with a periodicity, deduced from the space in between the fibers of between 3.5 Å and 4 Å. An assertion that elements of a claimed invention are inherent in a disclosure cannot provide a basis for a *prima facie* case of obviousness. Thus, the rejection of claim 3 over Hideyuki appears to be made in error and applicants respectfully ask that the rejection of claim 3 on this basis be withdrawn.

Claim 14 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Graetzel et al. (U.S. Patent 5,350,644) in view of JP '645. The rejection of claim 14 is respectfully traversed. As discussed above JP '645 discloses a porous gel prepared using a water-insoluble organic binder solution. Nothing in JP '645 discloses a polymer composition where the polymer comprises fibers wound

concentrically with a periodicity, deduced from the space in between the fibers of between 3.5 Å and 4 Å. Moreover, the Graetzel et al. patent does not overcome the deficiencies of the disclosure of JP '645. Applicants respectfully ask that the rejection of claim 14 over Graetzel et al., in view of JP '645, be withdrawn.

Claim 15 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Sato et al. (U.S. Patent 5,403,513) in view of JP '645. This rejection is respectfully traversed. As discussed above, JP '645 discloses a porous gel prepared using a water-insoluble organic binder solution. Nothing in JP '645 discloses a polymer composition where the polymer comprises fibers wound concentrically with a periodicity, deduced from the space in between the fibers of between 3.5 Å and 4 Å. Moreover, the Sato et al. patent does not overcome the deficiencies of the disclosure of JP '645. Neither reference, considered alone or in combination discloses the polymer compositions of the present claims. Applicants respectfully ask that the rejection of claim 15 over Sato et al., in view of JP '645 be withdrawn.

The outstanding office action indicates that claims 4-13 would be allowable if rewritten to overcome the rejections made under 35 U.S.C. §112, second paragraph and to incorporate the limitations of the base claim. To advance prosecution, applicants have amended claim 4, such that it is now an independent claim that incorporates the limitations of claim 1.

### **Conclusion**

Applicants respectfully submit that the claims of the present application are in condition for allowance and request a timely notice to that effect.

Applicants invite the Examiner to contact Applicants' representative at the telephone number listed below if any issues remain in this matter, or if a discussion regarding any portion of the application is desired by the Examiner.

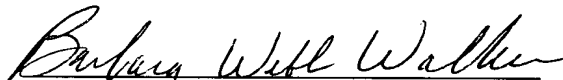
In the event that this paper is not timely filed within the currently set shortened statutory period, Applicants respectfully petition for an appropriate extension of time. The fees for such extension of time may be charged to our Deposit Account No. 02-4800.

In the event that any additional fees are due with this paper, please charge our Deposit Account No. 02-4800.

Respectfully submitted,

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